

CLAIM AMENDMENTS

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-18. (canceled)

19. (withdrawn) A method for the detection of a target molecule in a sample, the method comprising:

obtaining a diagnostic device, wherein the diagnostic device comprises a porous material comprising alumina, silica, or alumina and silica;

binding a partner molecule to the porous material, wherein the partner molecule binds to a target molecule;

obtaining a sample suspected of containing the target molecule;

contacting the diagnostic device and the sample to produce a partner molecule - target molecule complex; and

detecting the partner molecule - target molecule complex.

20. (withdrawn) The method of claim 19, wherein the partner molecule is covalently bound to the porous material.

21. (withdrawn) The method of claim 19, further defined as a microtiter plate.

22. (withdrawn) The method of claim 19, further defined as a bead.

23. (withdrawn) The method of claim 19, wherein the porous material comprises alumina and silica.

24. (withdrawn) The method of claim 19, wherein the porous material is made from a composition comprising alumina, silica, and boron.

25. (withdrawn) The method of claim 19, wherein the porous material comprises about 1% to about 50% by weight alumina and about 50% to about 98% by weight silica.

26. (withdrawn) The method of claim 19, wherein the porous material is made from a composition comprising about 1% to about 50% by weight alumina, about 50% to about 98% by weight silica, and about 1% to about 5% by weight boron.

27. (withdrawn) The method of claim 19, wherein the mean pore diameter of the porous material is greater than about 10 microns.

28. (withdrawn) The method of claim 19, wherein the density of the porous material is at least about 6 pounds per cubic foot (96.1 kg/m^3).

29. (withdrawn) The method of claim 19, wherein the exposed surface of the porous material is at least about 50% silicon dioxide.

30. (withdrawn) The method of claim 19, wherein the partner molecule is a peptide.

31. (withdrawn) The method of claim 19, wherein the partner molecule is an oligosaccharide.

32. (withdrawn) The method of claim 19, wherein the partner molecule is a protein.

33. (withdrawn) The method of claim 19, wherein the partner molecule is an antibody.

34. (withdrawn) The method of claim 19, wherein the partner molecule is an oligonucleotide.

35. (withdrawn) The method of claim 19, wherein the partner molecule is DNA.

36. (withdrawn) The method of claim 19, wherein the partner molecule is RNA.

37. (withdrawn) The method of claim 19, wherein the partner molecule - target molecule complex is detected by fluorescence.

38. (withdrawn) The method of claim 19, wherein the partner molecule - target molecule complex is detected by radioactivity.

39. (withdrawn) The method of claim 19, wherein the partner molecule - target molecule complex is detected by visible spectroscopy.

40. (withdrawn) The method of claim 19, wherein the partner molecule - target molecule complex is detected by ultraviolet spectroscopy.

41. (Currently Amended) A diagnostic device comprising:
a rigid three-dimensional porous material manufactured from alumina, silica and a fusion source, said material having mean pore diameters greater than about 10 microns and a density equal to or greater than ~~about~~ 6 pounds per cubic foot, said material is in a form selected from the group of forms consisting of plates, cylinders, discs, particles, tubes, beads, coatings, and any combination thereof, wherein compounds selected from the group consisting of antibodies, oligonucleotides, DNA, RNA, peptides, proteins, oligosaccharides, enzymes, receptors, and any combination thereof are bound to the material.

42. (canceled)

43. (previously presented) The device of Claim 41 wherein the material is manufactured from a boron fusion source.

44. (previously presented) The device of Claim 41 wherein the material is manufactured from a boron nitride fusion source.

45. (canceled).

46. (previously presented) The device of Claim 41 wherein the material is silanated.

47. (previously presented) The device of Claim 41 wherein an exposed surface of the material comprises at least 50% silicon dioxide.

48. (previously presented) The device of Claim 41 wherein an exposed surface of the material has been modified by a chemical reaction.

49-55. (canceled)

56. (previously presented) The device of Claim 41 wherein the material is manufactured from about 1% to about 50% by weight alumina.

57. (previously presented) The device of Claim 56 wherein the material is further manufactured from about 50% to about 98% by weight silica.

58. (previously presented) The device of Claim 57 wherein the material is further manufactured from about 1% to about 5% by weight of a fusion source comprising boron.

59-61. (canceled)